



Capital Cost Estimates

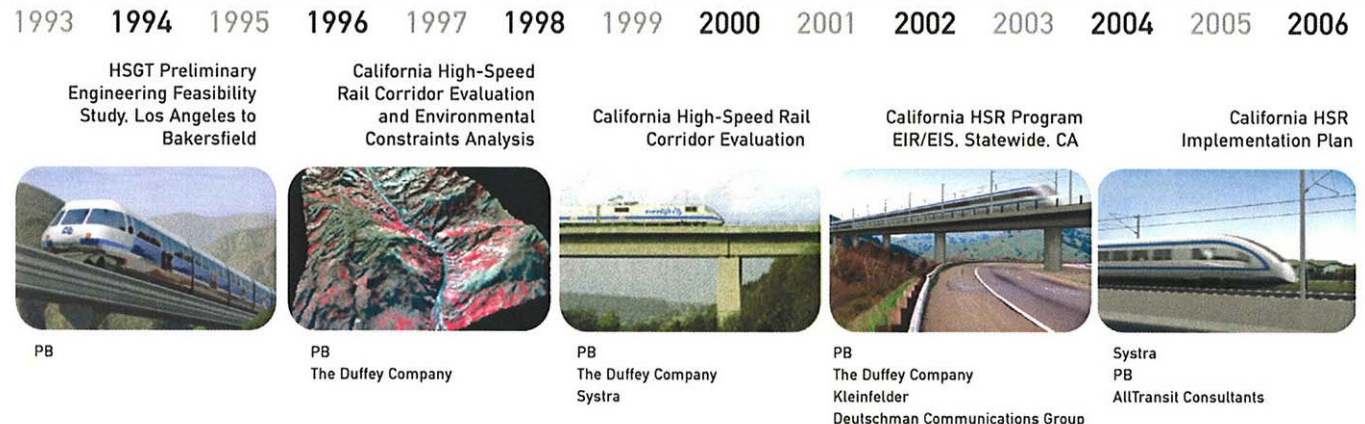
Bay Area to Central Valley Program EIR/EIS

California High-Speed Rail Authority

March 2, 2007

Basis for Estimate

- Previous Studies
 - LA – Bakersfield P.E. Feasibility Study
 - Corridor Evaluation and Environmental Constraints Analysis
 - Corridor Evaluation
 - Statewide Program EIR/EIS



Basis for Estimate

- Peer Reviews
 - Japan Railway Technical Service (JARTS)
 - Technical Consulting Division of Japan Railways
 - SNCF International (SNCF)
 - The French National Railways
 - DE Consult (DEC)
 - The Technical Consulting Division of the German National Railways
- Other Reviews



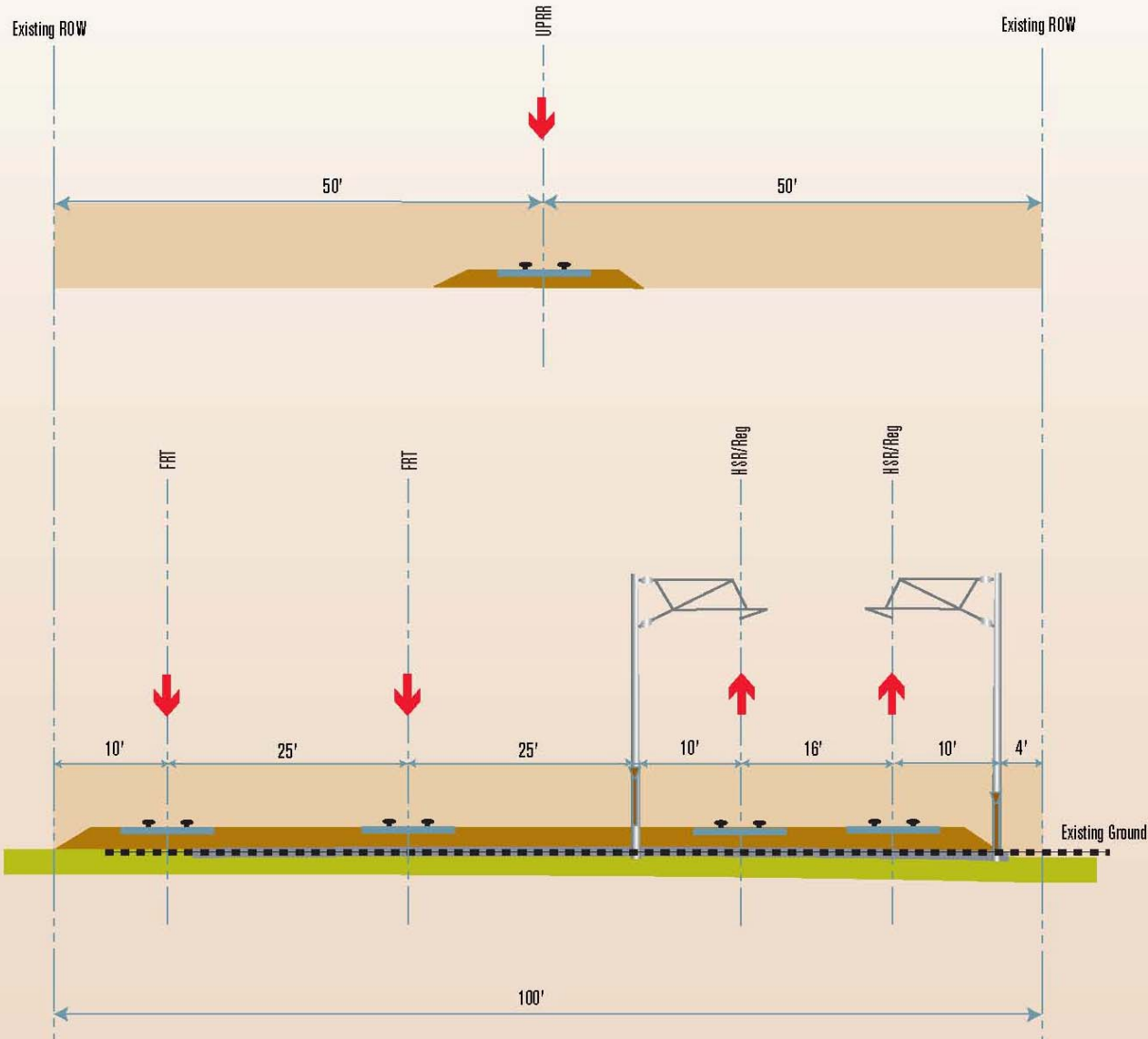
Basis for Estimate

- California Cost Data
 - Caltrans
 - Local and Regional Agencies
 - Consultant Records and Review
- ENR Construction Cost Index



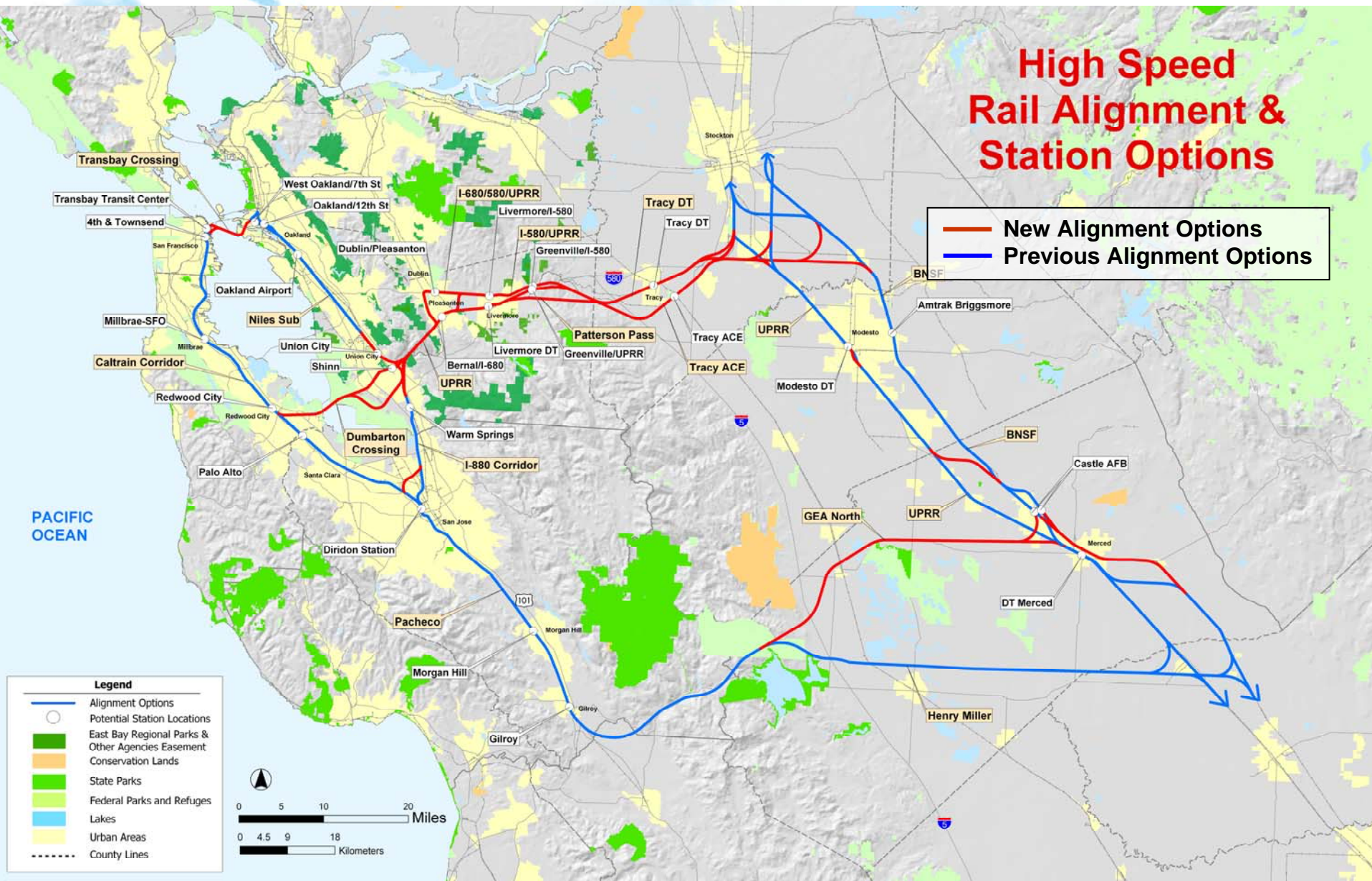


Cross Section

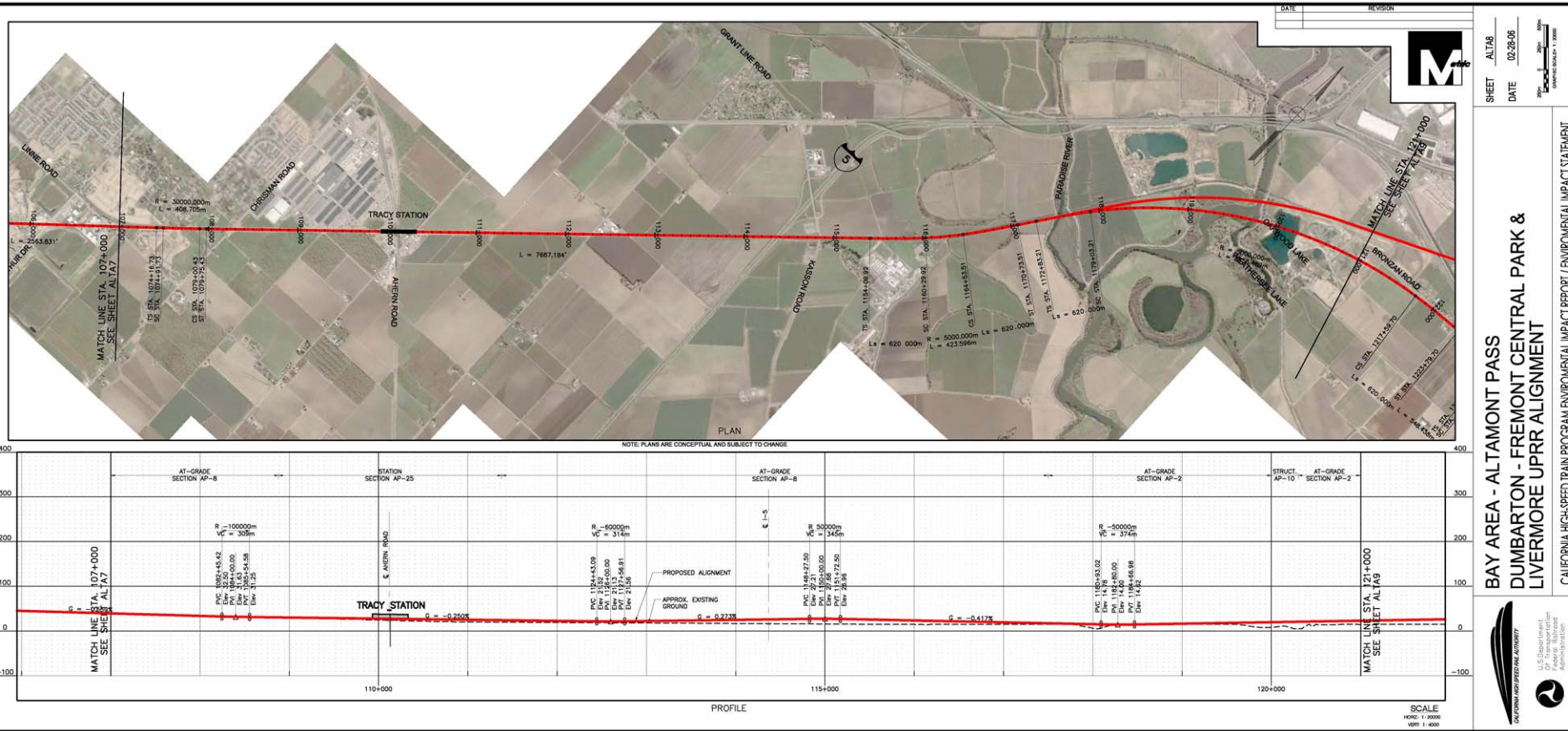


Existing Condition

**4 Tracks at Grade
Section AP-8**



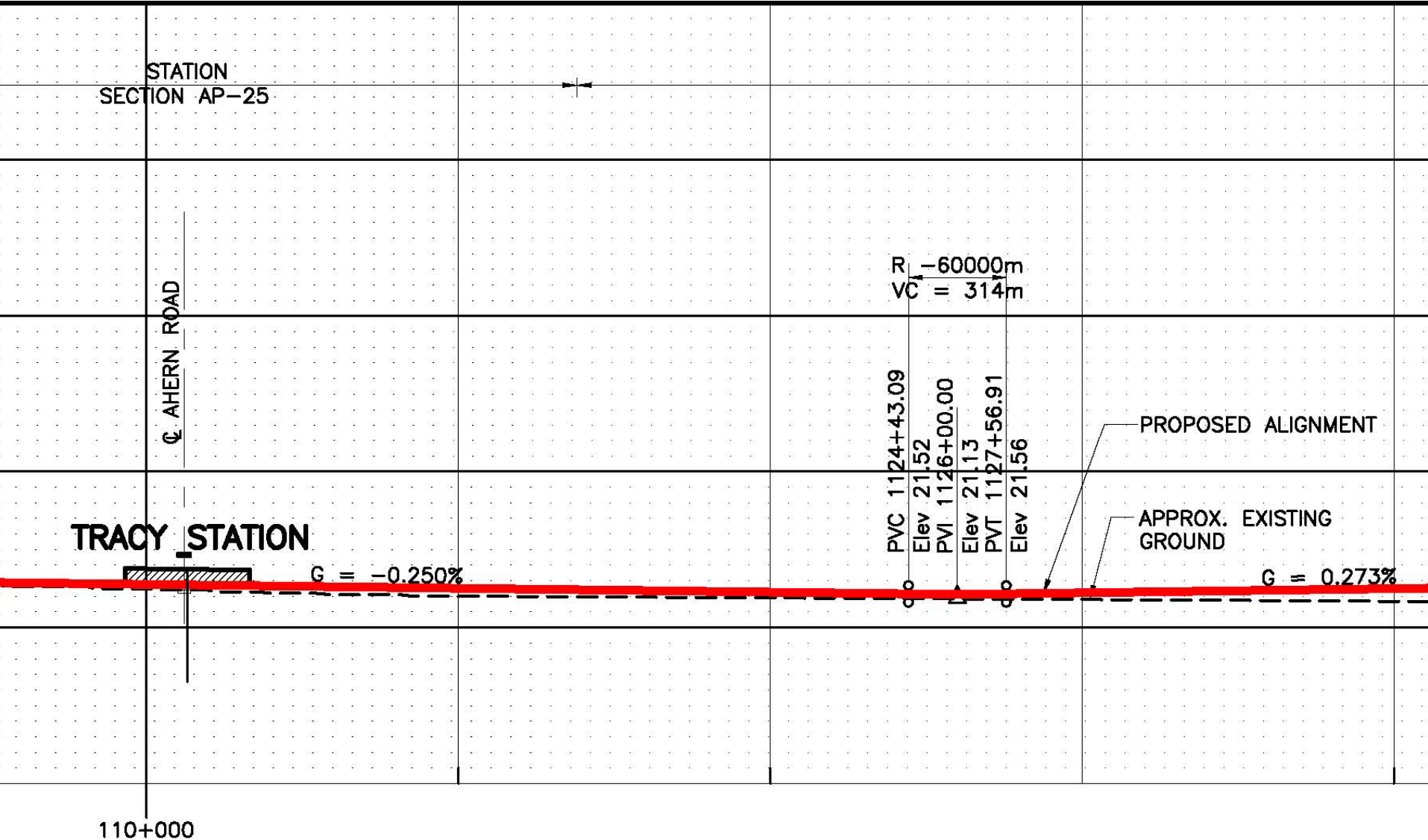
Plan and Profile



Plan



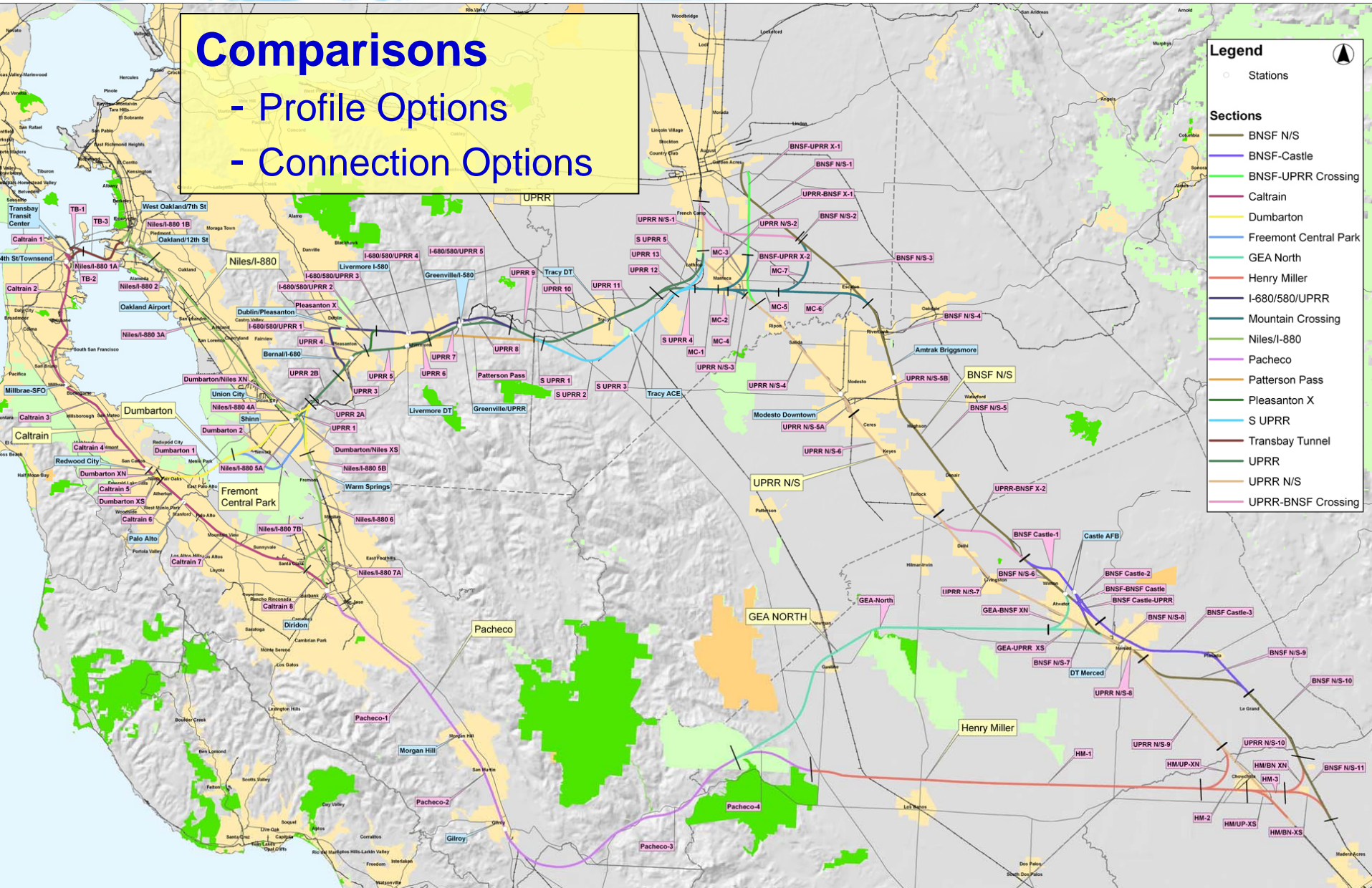
Profile



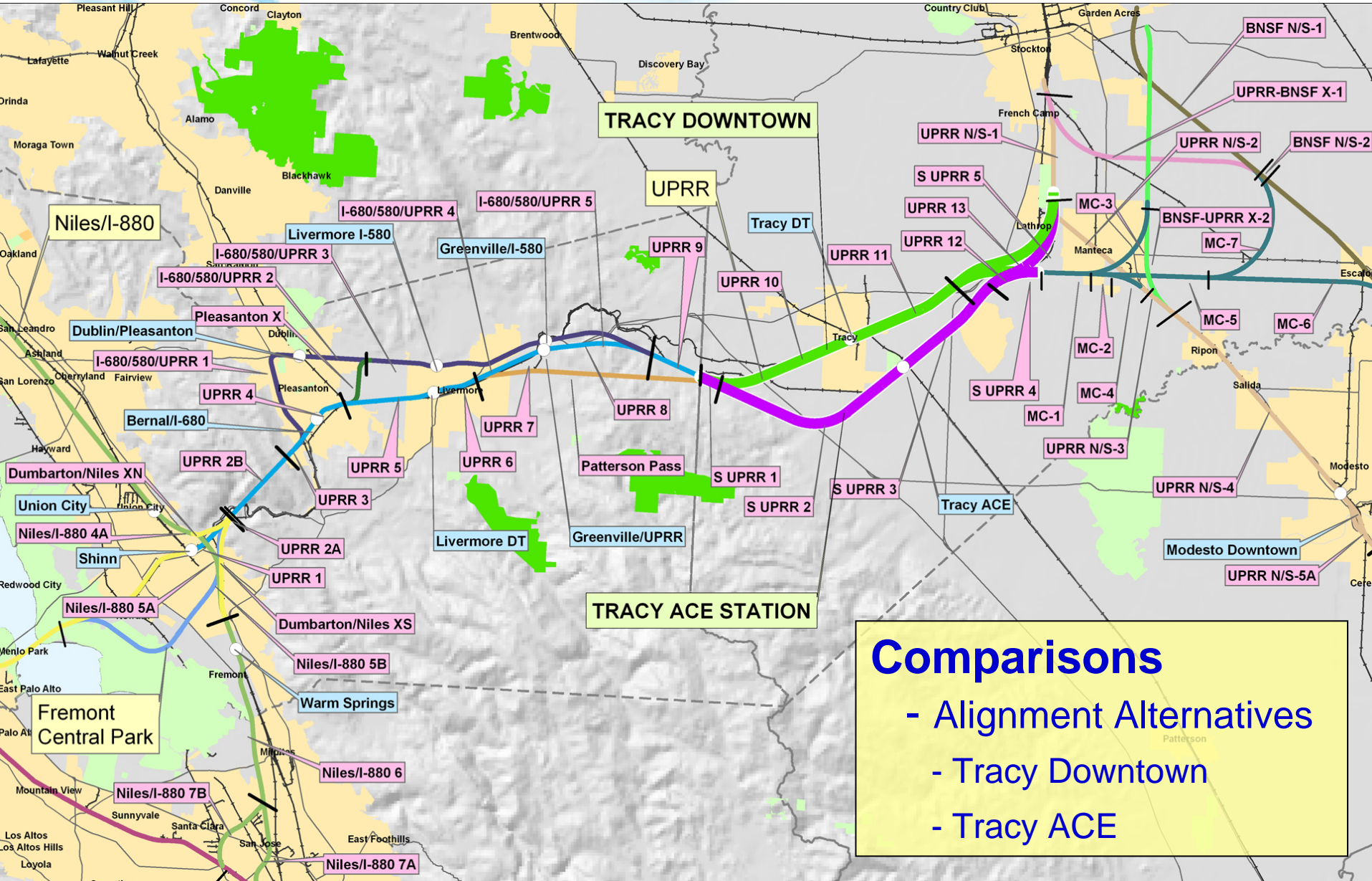
Segments

Comparisons

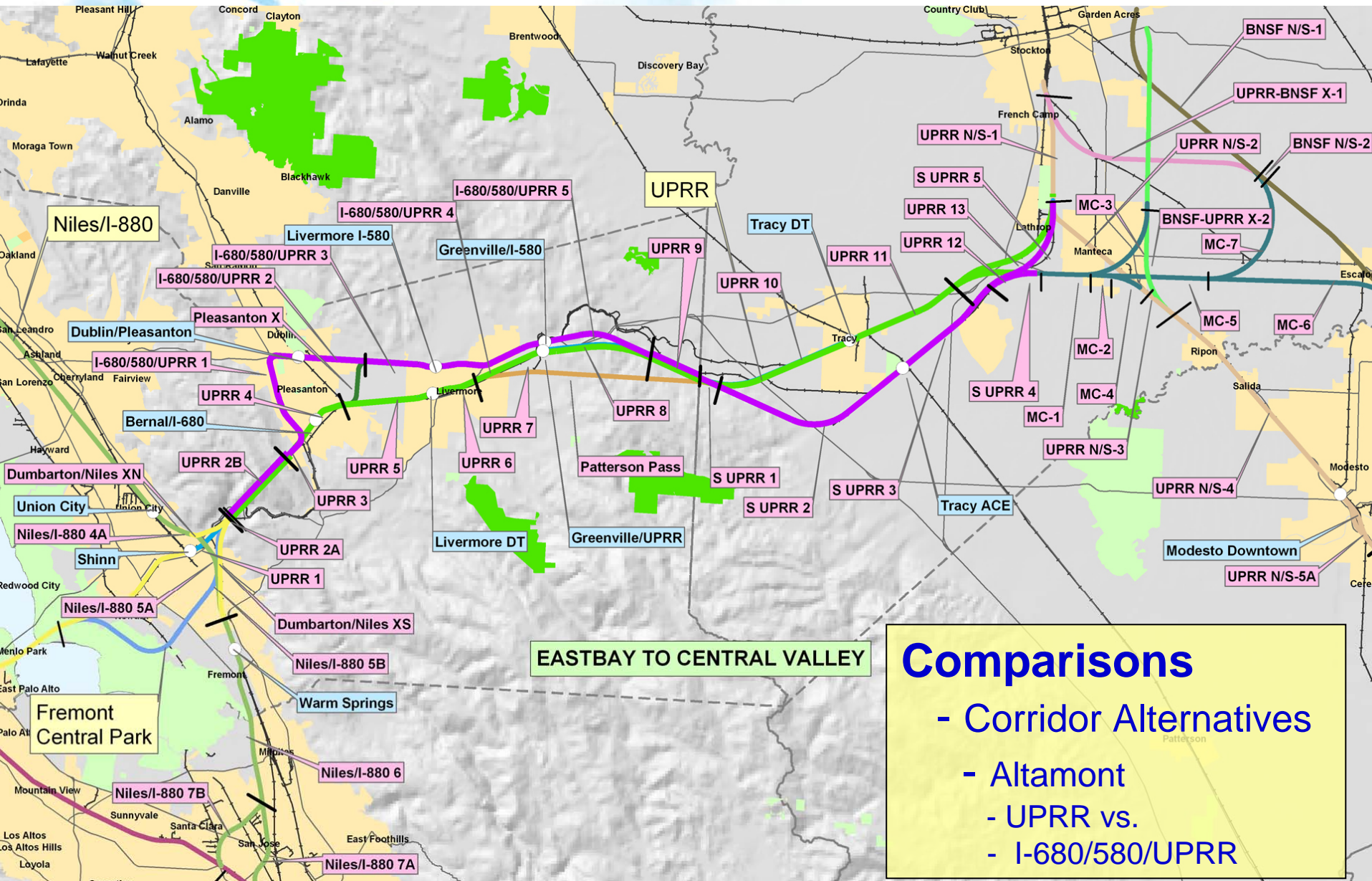
- Profile Options
- Connection Options



Alignment Alternatives



Corridors - Altamont

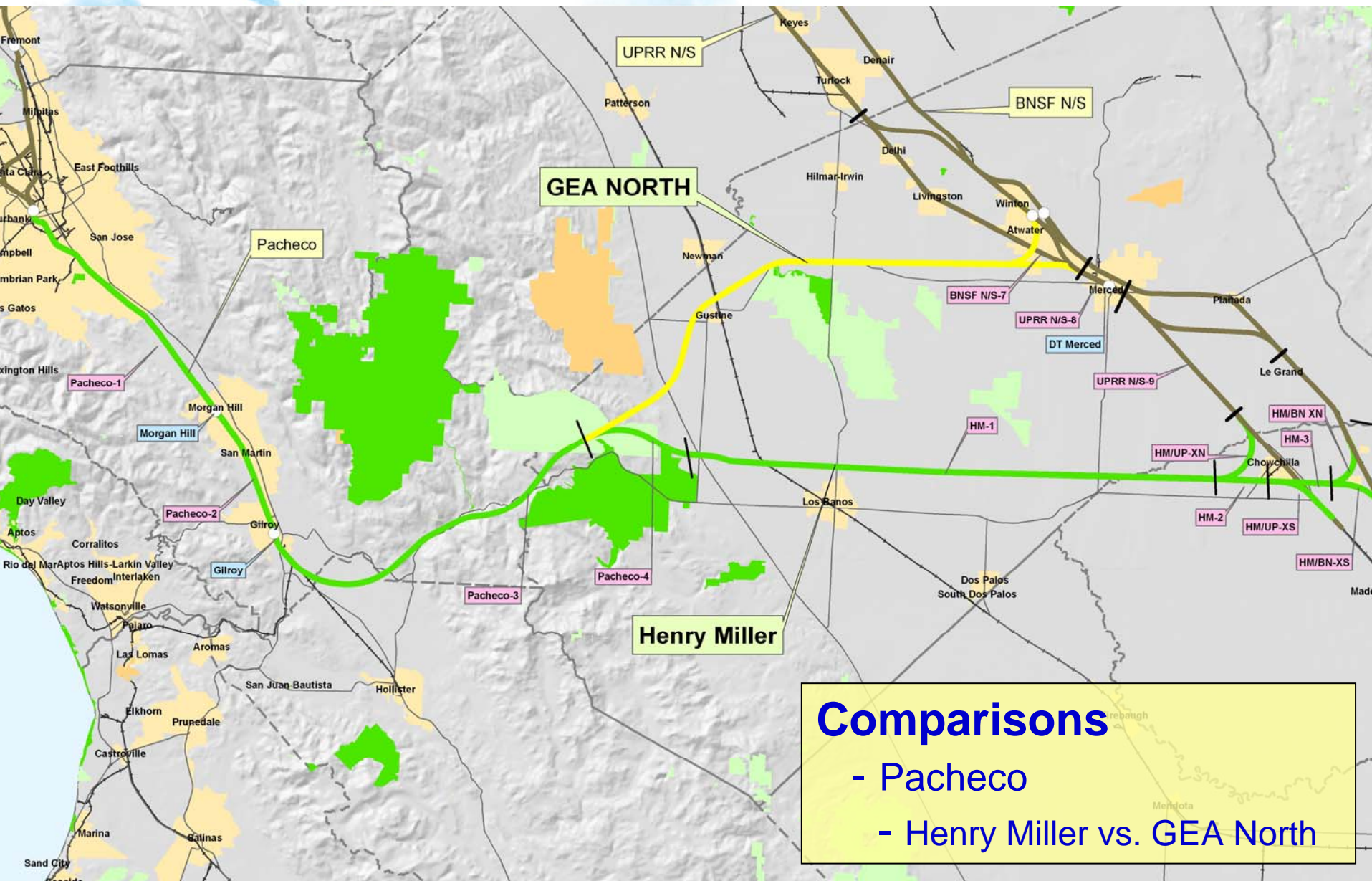


EASTBAY TO CENTRAL VALLEY

Comparisons

- Corridor Alternatives
- Altamont
- UPRR vs.
- I-680/580/UPRR

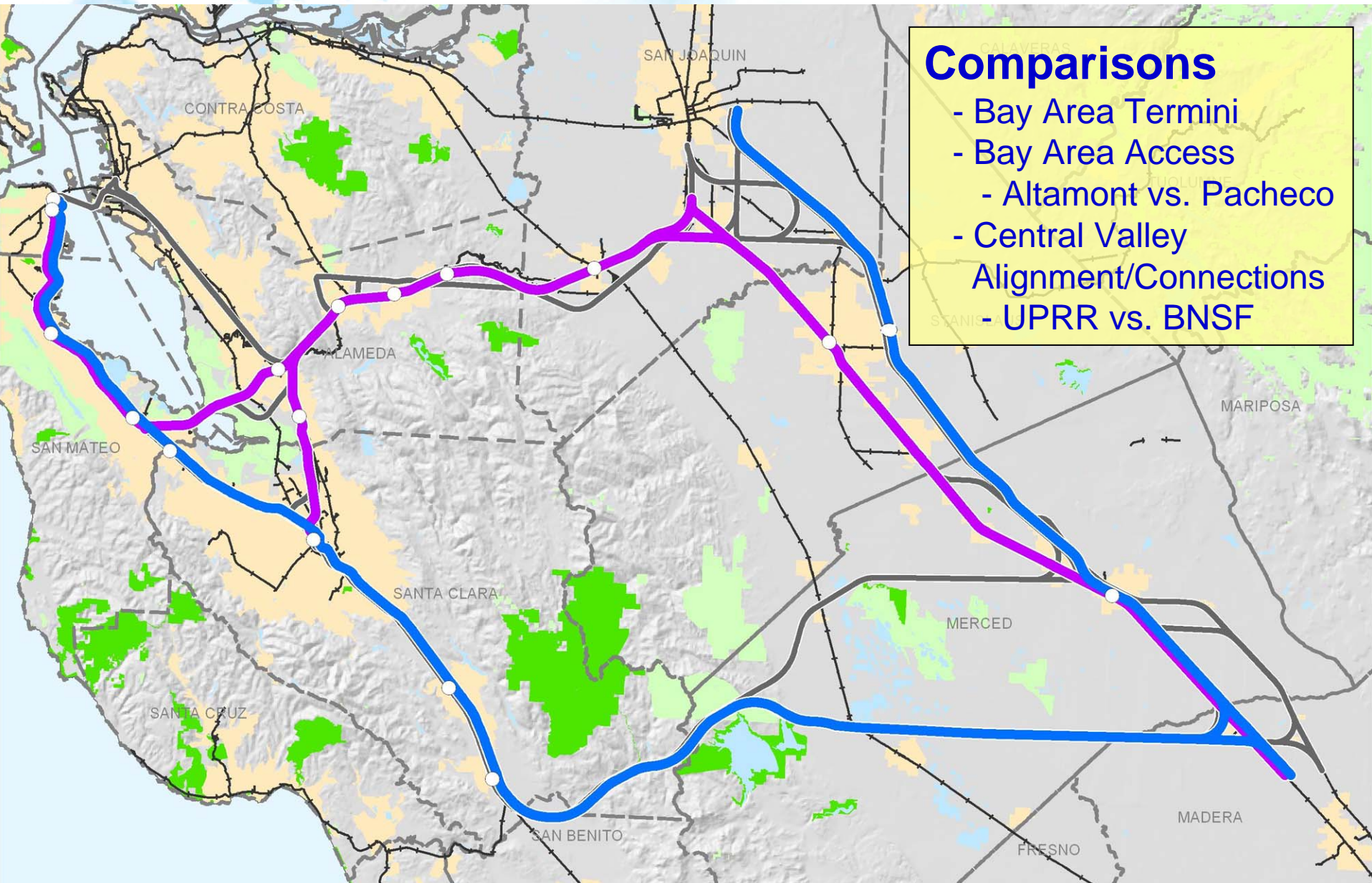
Corridors - Pacheco



Comparisons

- Pacheco
- Henry Miller vs. GEA North

Network Alternatives



Comparisons

- Bay Area Termini
- Bay Area Access
 - Altamont vs. Pacheco
- Central Valley Alignment/Connections
 - UPRR vs. BNSF



Network Alternatives

Altamont Pass

- San Francisco and San Jose Termini
- Oakland and San Jose Termini
- San Francisco, Oakland, and San Jose Termini
- San Jose Terminus
- San Francisco Terminus
- Oakland Terminus
- Union City Terminus
- San Francisco and San Jose—via SF Peninsula
- San Francisco, San Jose, and Oakland—with no San Francisco Bay Crossing
- Oakland and San Francisco—via Transbay Tube
- San Jose, Oakland, and San Francisco—via Transbay Tube

Pacheco Pass

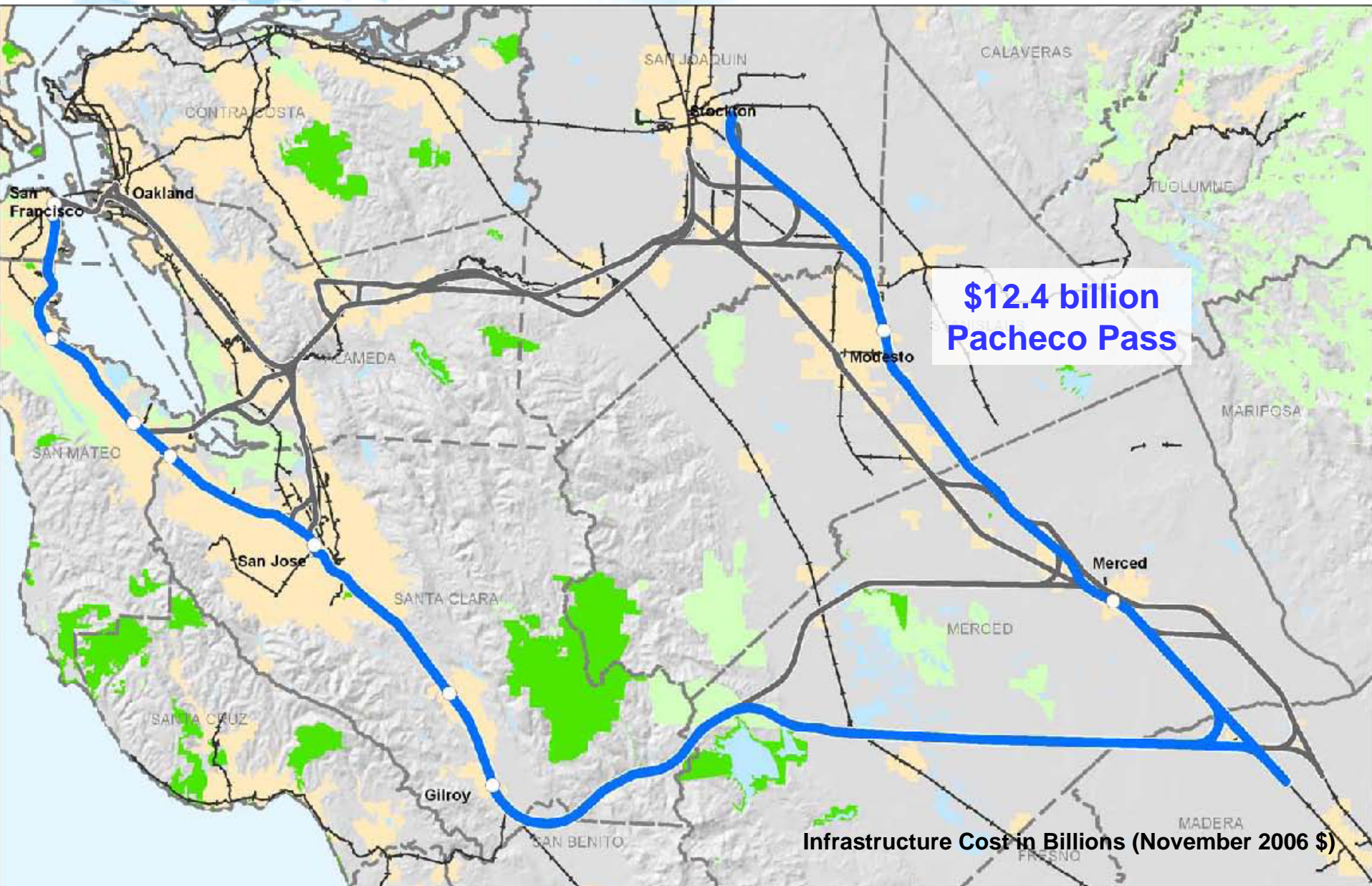
- San Francisco and San Jose Termini
- Oakland and San Jose Termini
- San Francisco, Oakland, and San Jose Termini
- San Jose Terminus
- San Jose, San Francisco, and Oakland—via Transbay Tube
- San Jose, Oakland, and San Francisco—via Transbay Tube

Pacheco Pass with Altamont Pass (Local Service)

- San Francisco and San Jose Termini
- Oakland and San Jose Termini
- San Francisco, Oakland, and San Jose Termini (with Dumbarton Bridge)
- San Francisco, Oakland, and San Jose Termini (without Dumbarton Bridge)
- San Jose Terminus

Pacheco Pass

San Francisco and San Jose Termini

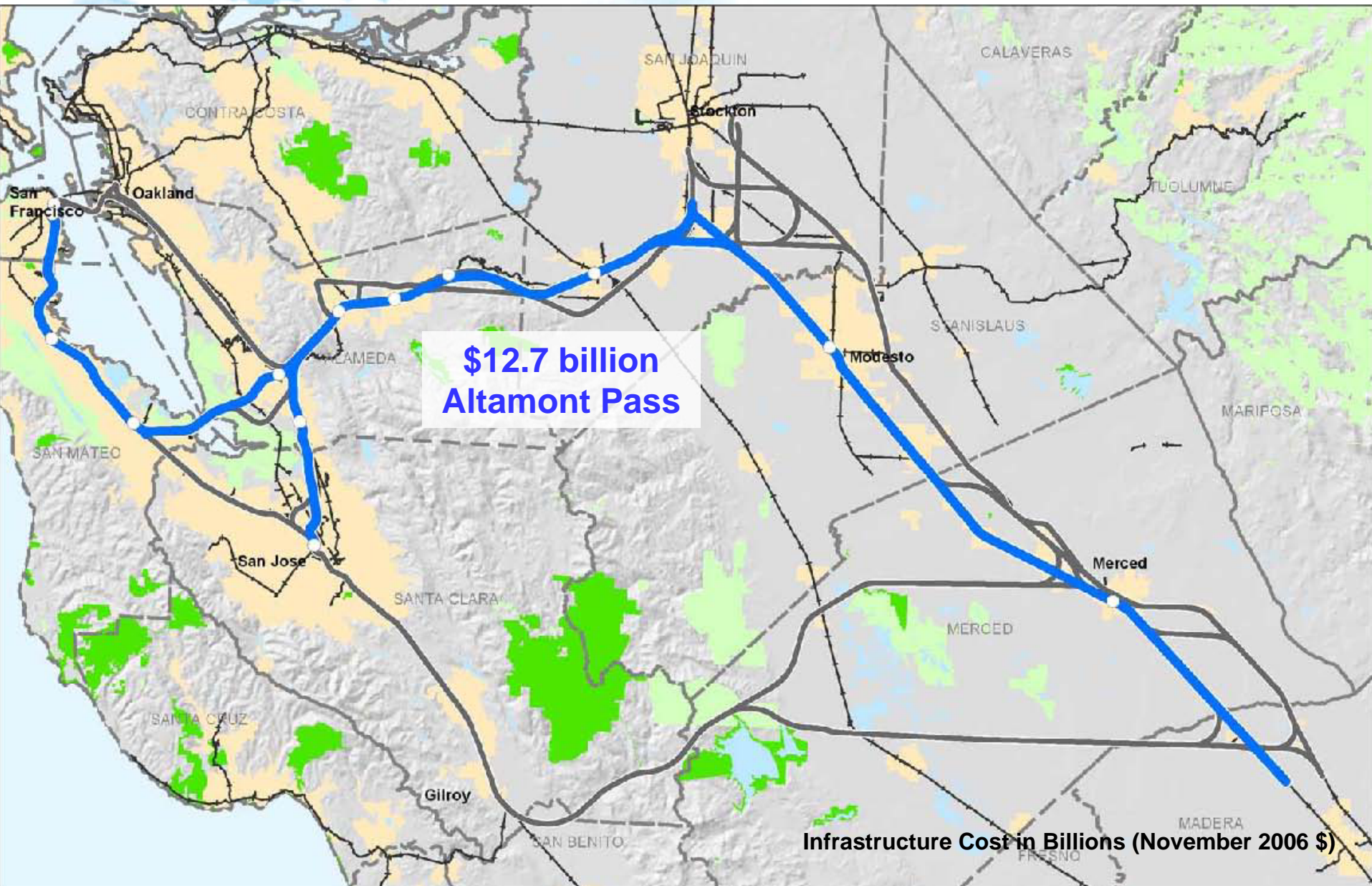


Infrastructure Cost in Billions (November 2006 \$)



Altamont Pass

San Francisco and San Jose Termini

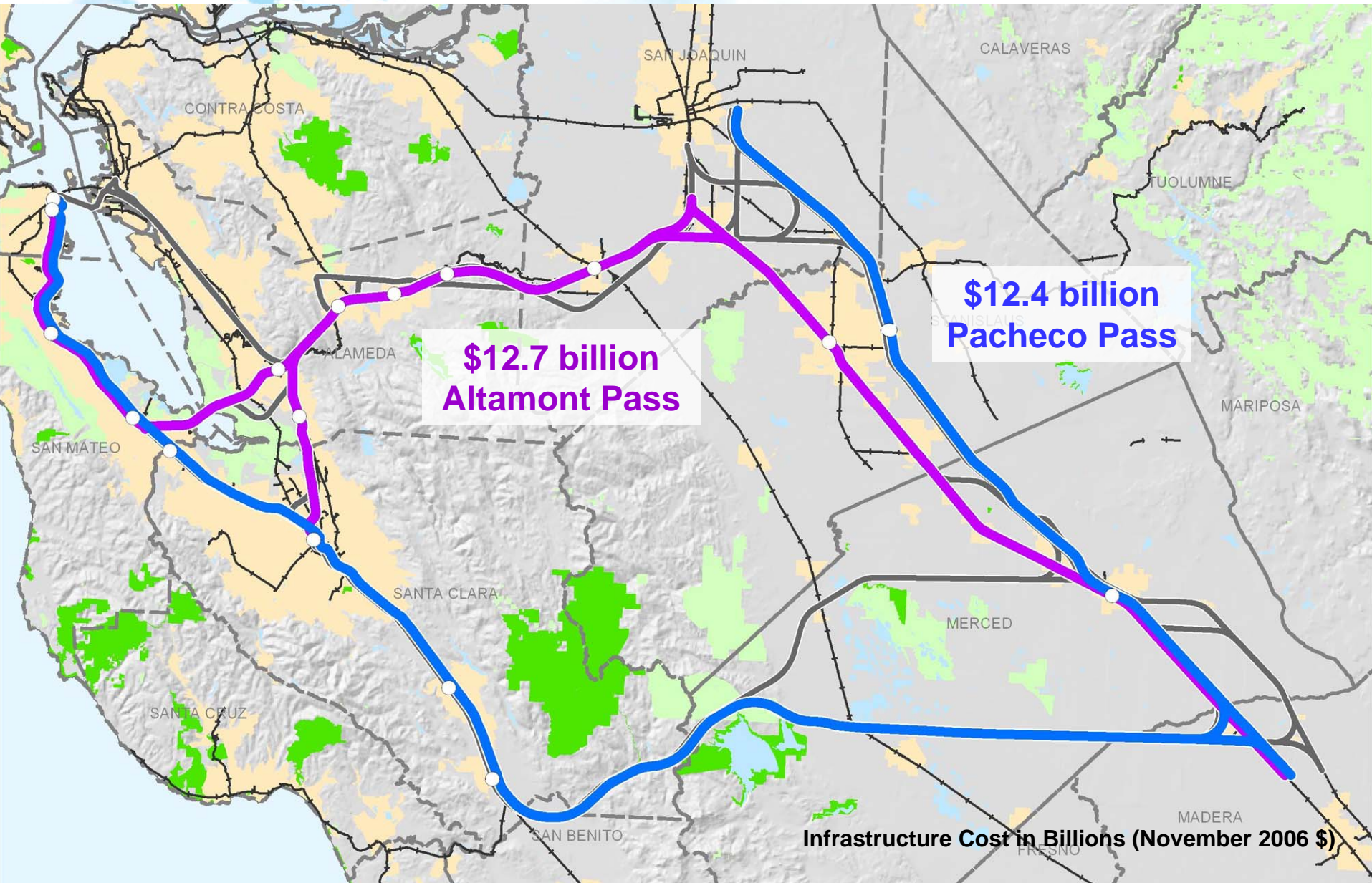


**\$12.7 billion
Altamont Pass**

Infrastructure Cost in Billions (November 2006 \$)

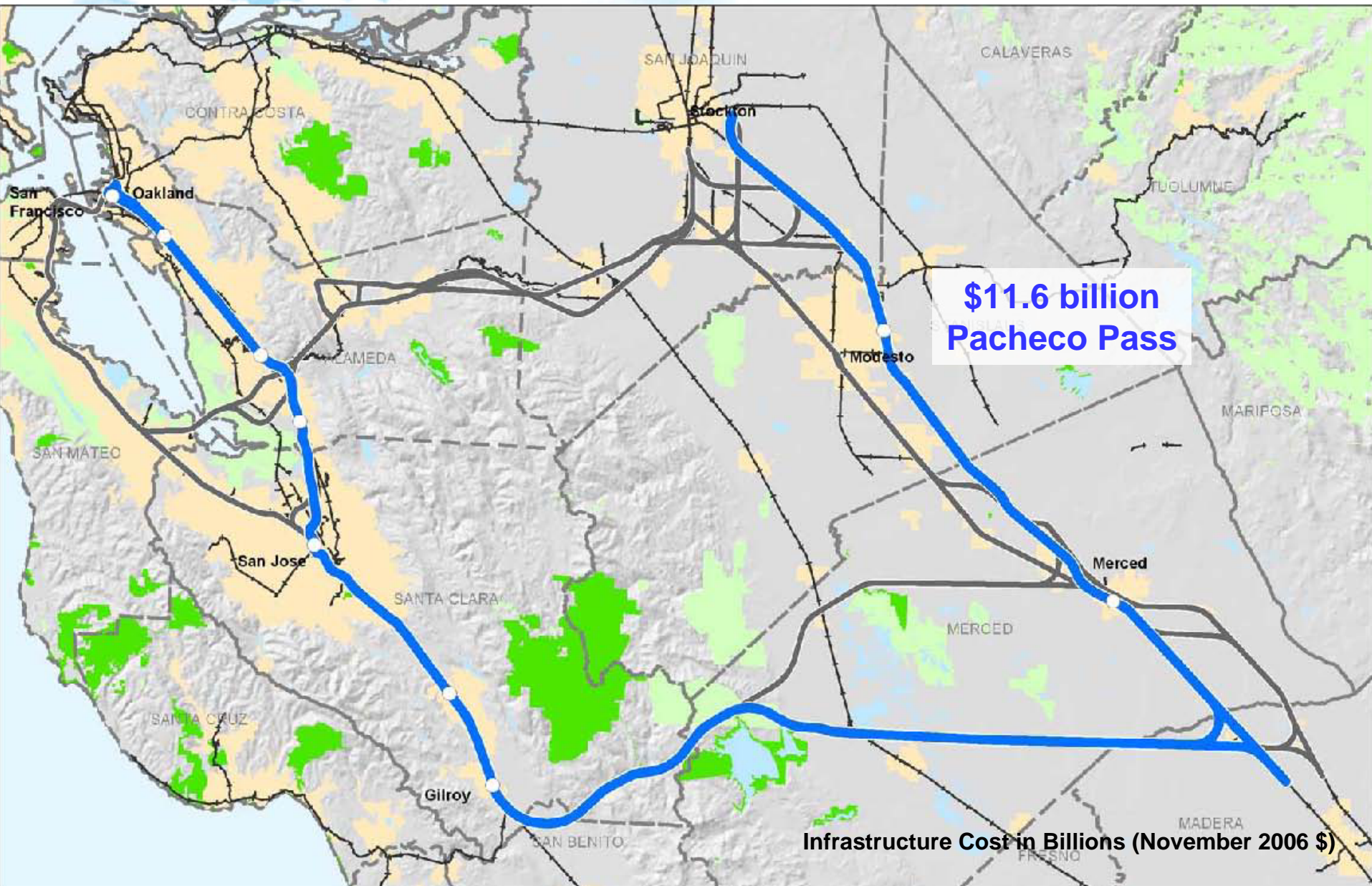
Pacheco Pass / Altamont Pass

San Francisco and San Jose Termini



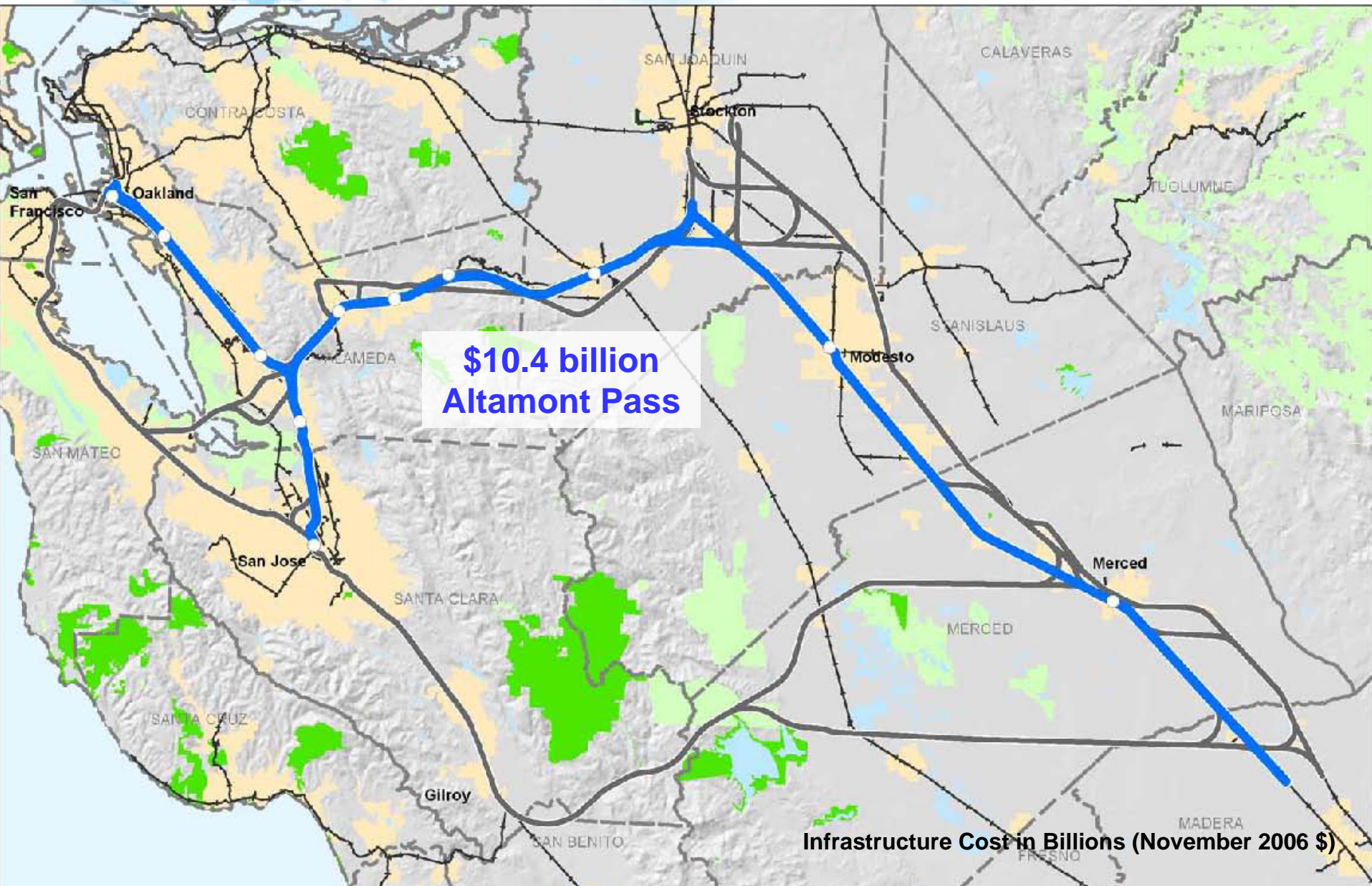
Pacheco Pass

Oakland and San Jose Termini



Altamont Pass

Oakland and San Jose Termini

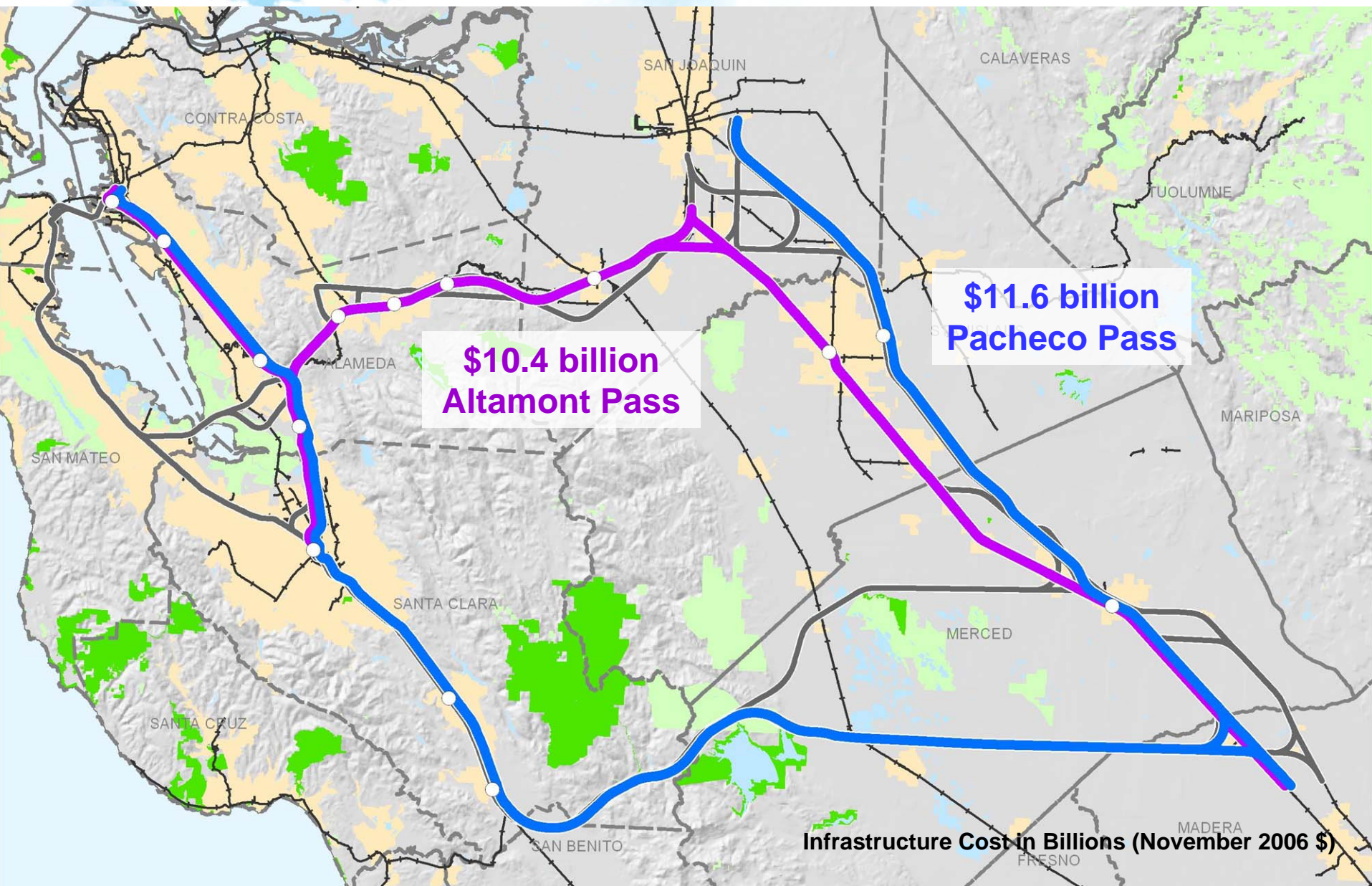


Infrastructure Cost in Billions (November 2006 \$)



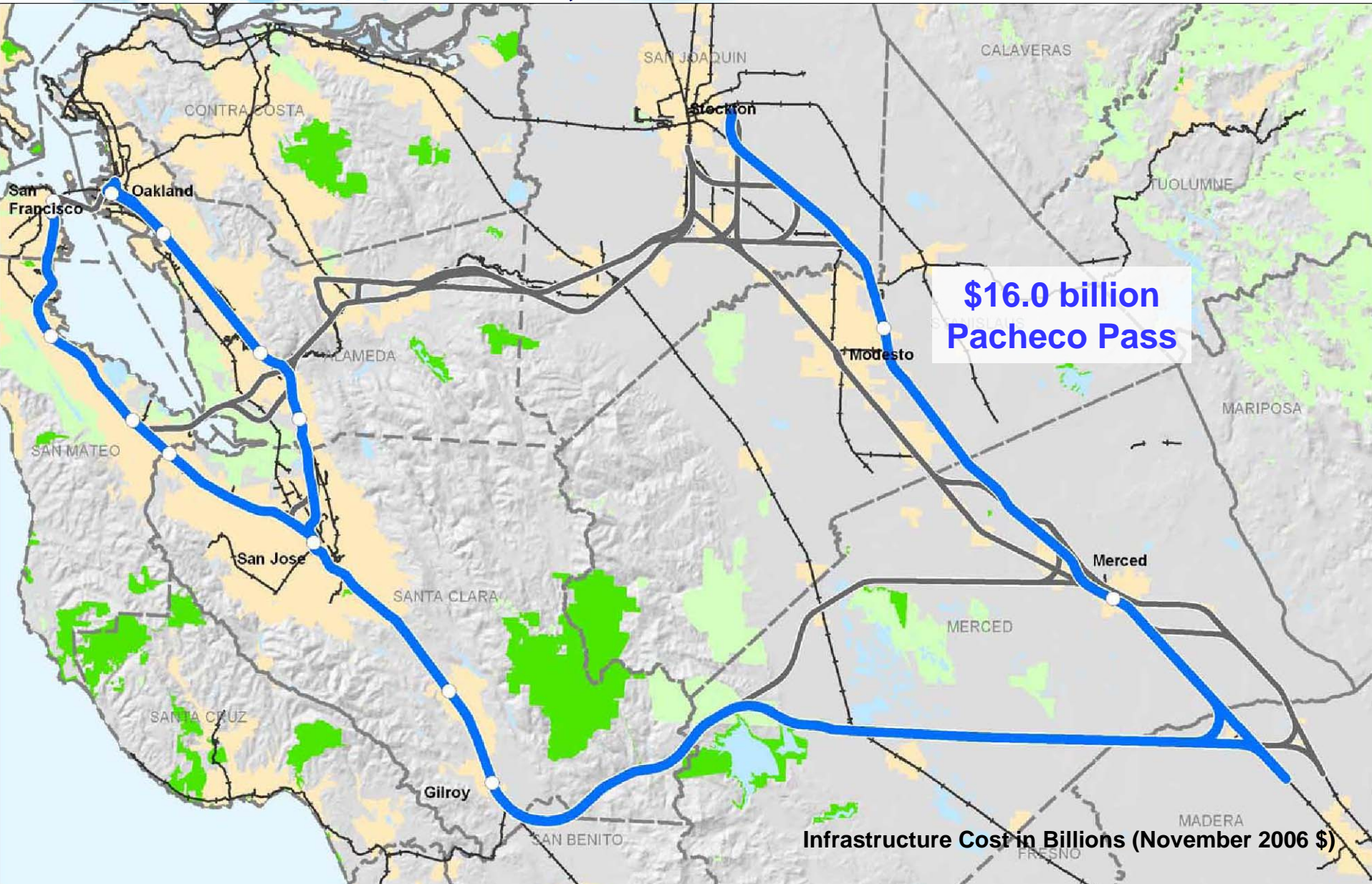
Pacheco Pass / Altamont Pass

Oakland and San Jose Termini



Pacheco Pass

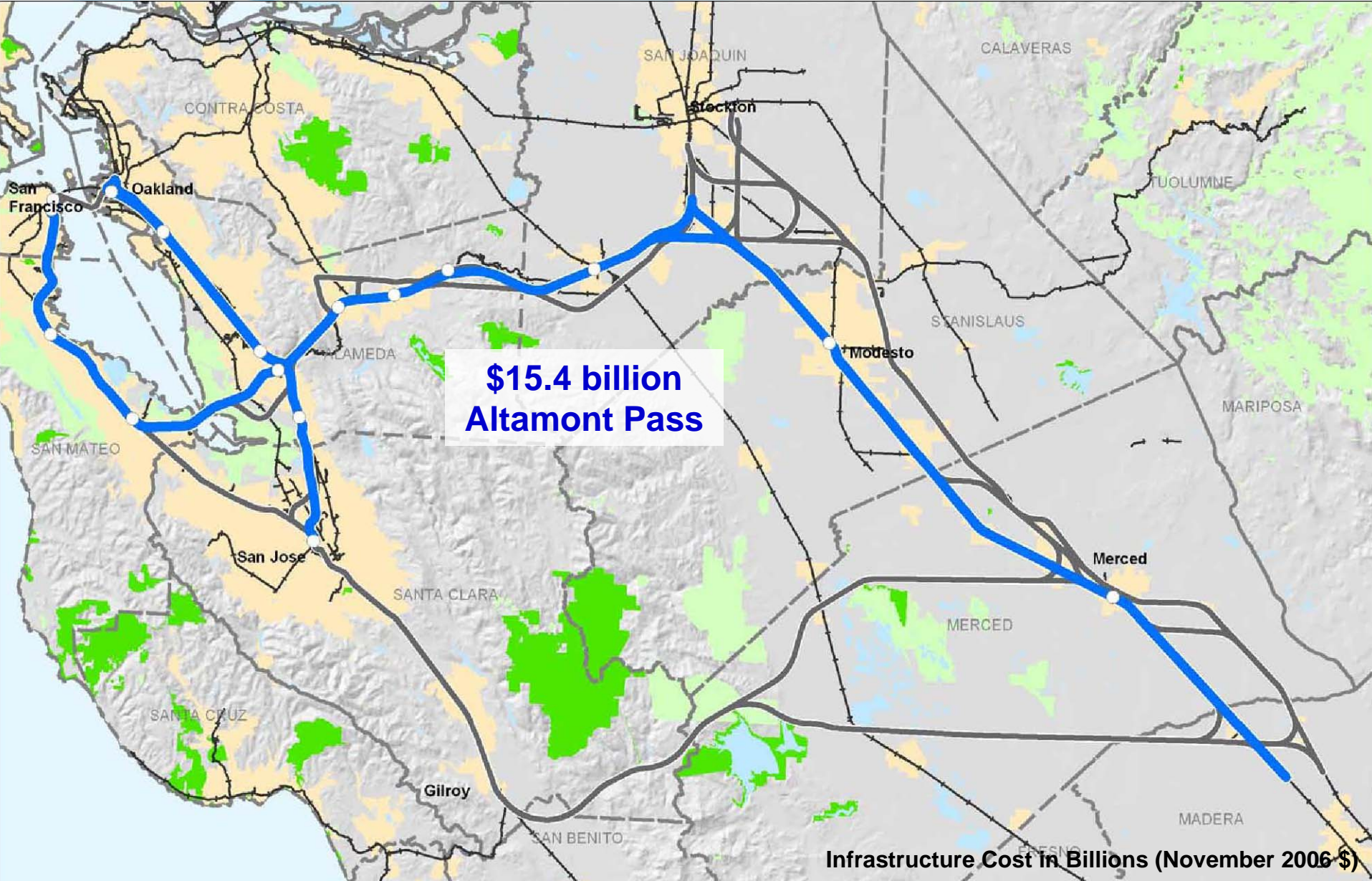
San Francisco, Oakland and San Jose Termini





Altamont Pass

San Francisco, Oakland and San Jose Termini

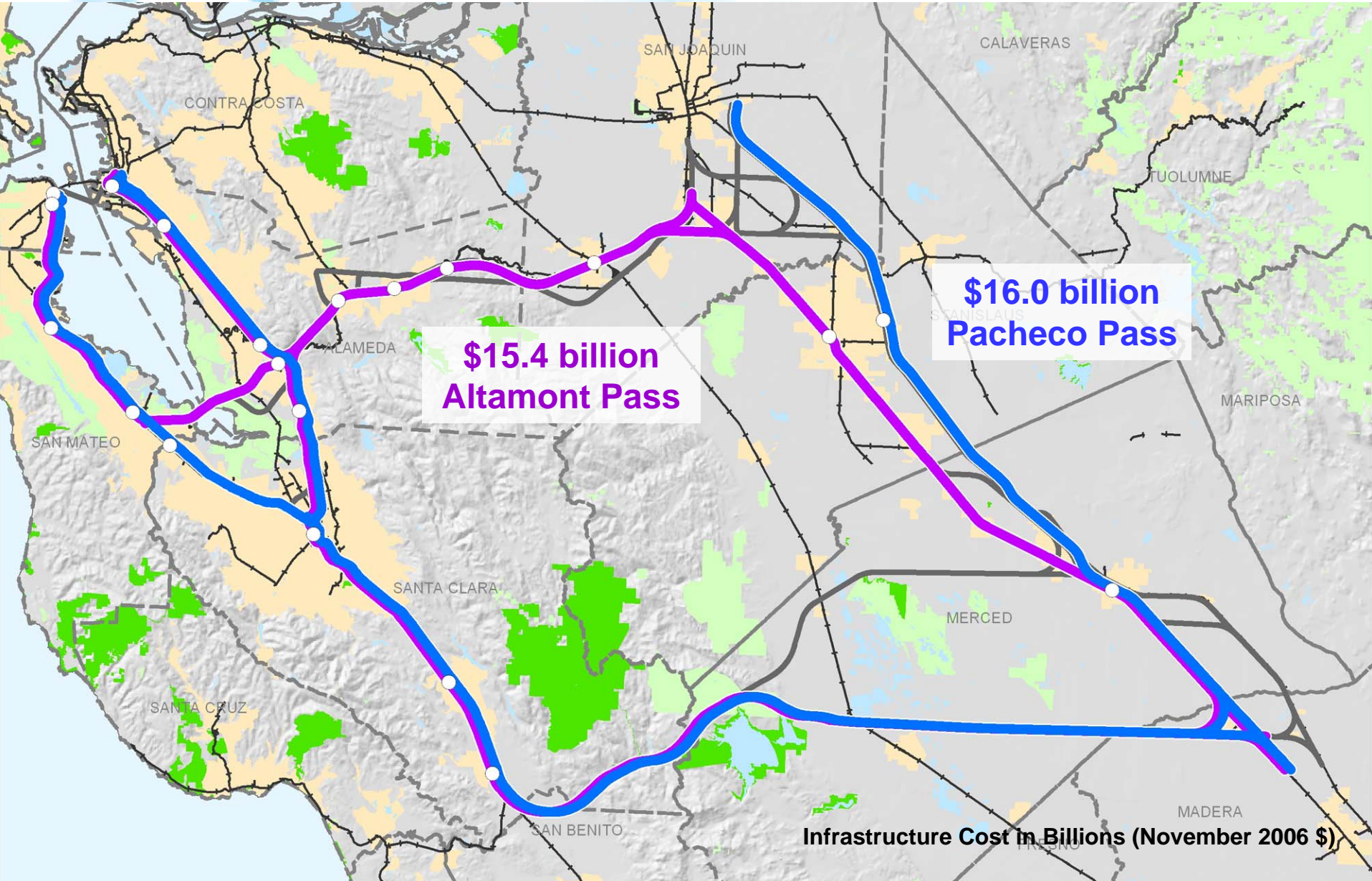


Infrastructure Cost in Billions (November 2006 \$)



Pacheco Pass / Altamont Pass

San Francisco, Oakland and San Jose Termini



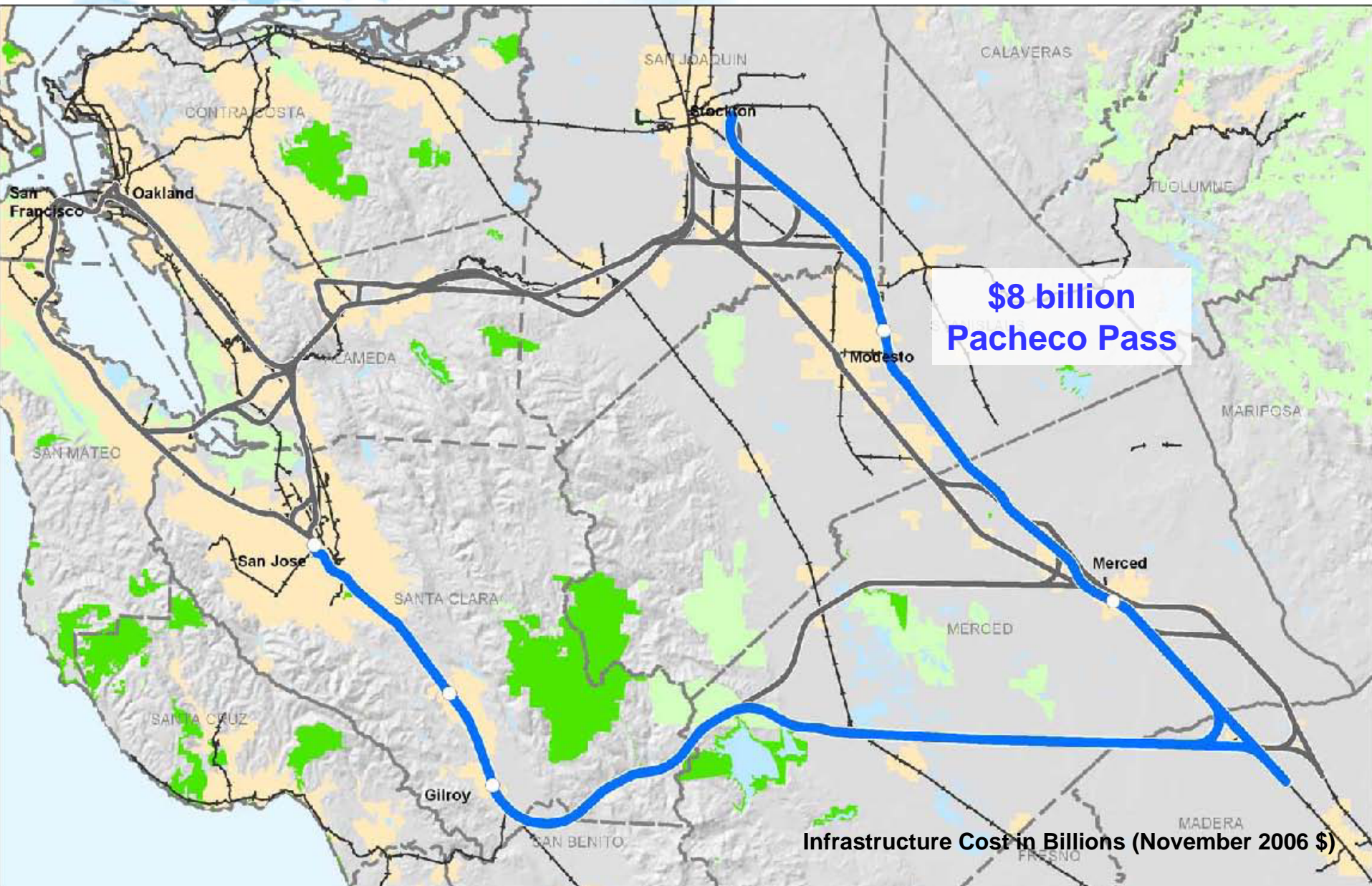
\$15.4 billion
Altamont Pass

\$16.0 billion
Pacheco Pass

Infrastructure Cost in Billions (November 2006 \$)

Pacheco Pass

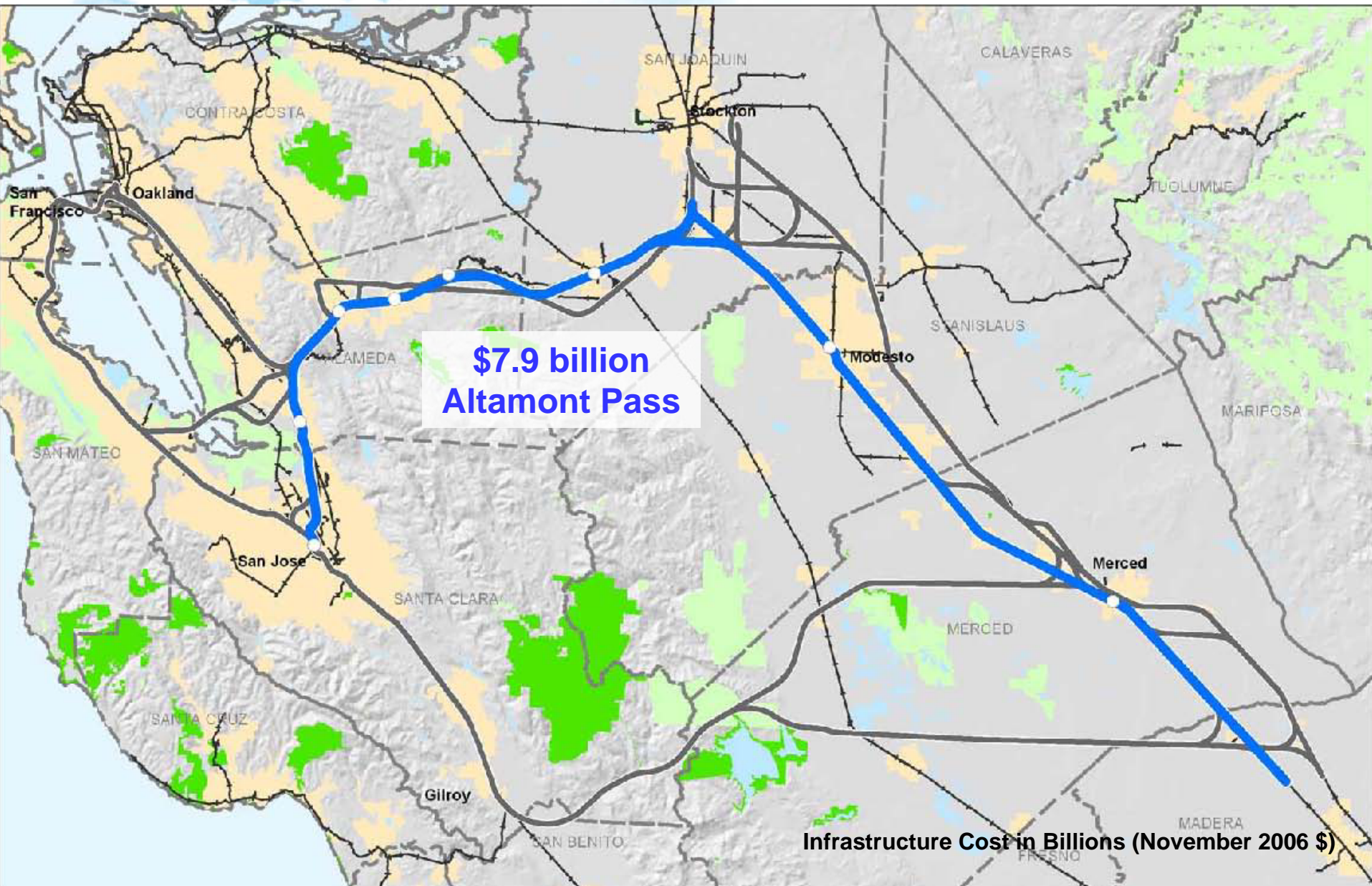
San Jose Termini





Altamont Pass

San Jose Termini

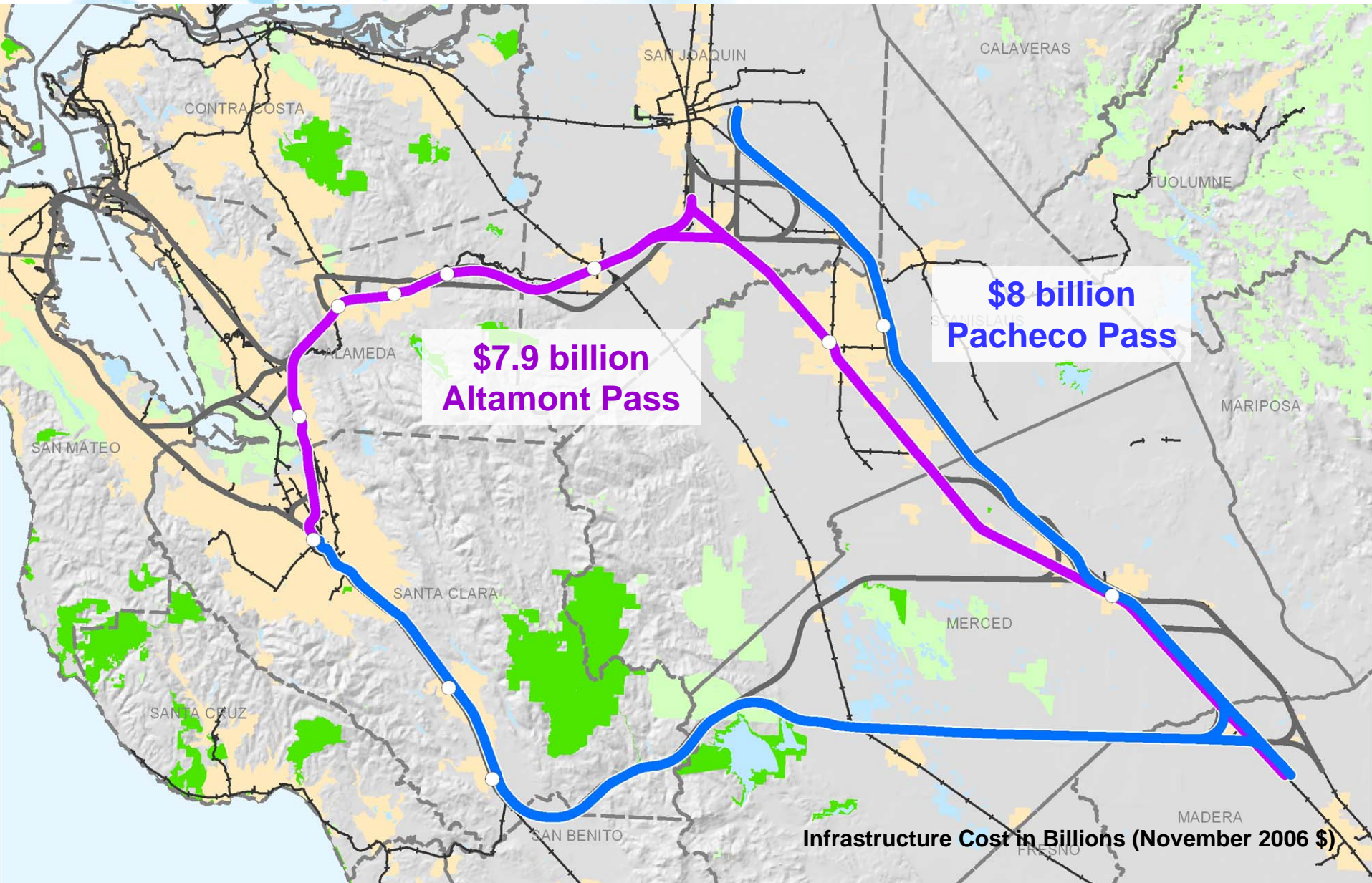


Infrastructure Cost in Billions (November 2006 \$)



Pacheco Pass / Altamont Pass

San Jose Termini





Network Alternatives

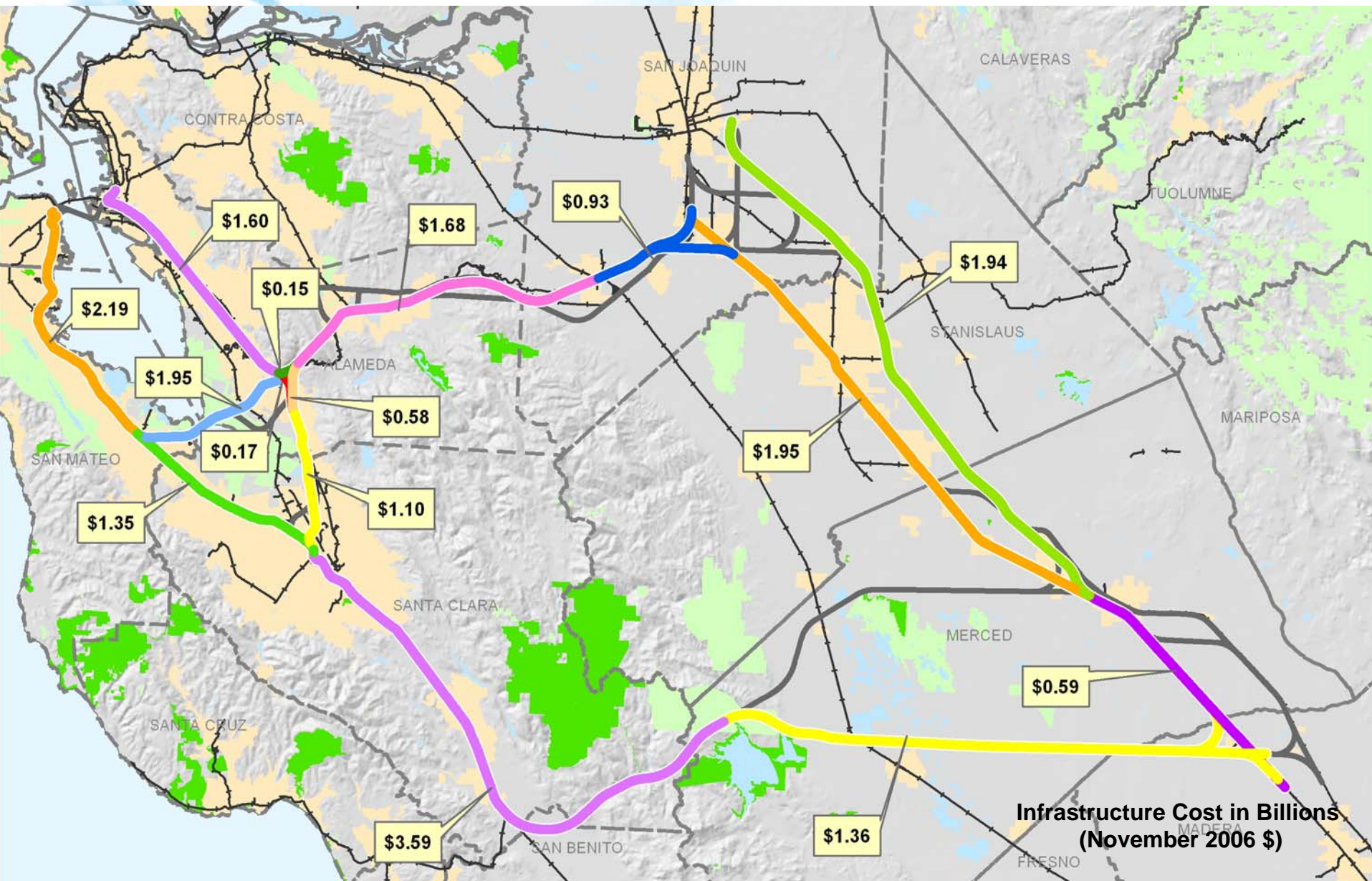
Cost Summary Table

	Length Miles	Average Total Cost \$/mile	Total Costs
Pacheco Pass			
San Francisco and San Jose Termini	268	\$46 million	\$12.4 billion
Oakland and San Jose Termini	257	\$45 million	\$11.6 billion
San Francisco, Oakland and San Jose Termini	310	\$52 million	\$16.0 billion
San Jose Termini	213	\$37 million	\$ 8.0 billion
Altamont Pass			
San Francisco and San Jose Termini	203	\$63 million	\$12.7 billion
Oakland and San Jose Termini	182	\$58 million	\$10.4 billion
San Francisco, Oakland and San Jose Termini	241	\$65 million	\$15.4 billion
San Jose Termini	160	\$50 million	\$ 7.9 billion



Infrastructure Cost in Billions (November 2006 \$)

Cost by Alignment Alternative





Changes in Cost Estimates

- Inflation
 - Statewide Program EIR/EIS (Sept. 2003)
 - Bay Area to Central Valley Studies (Nov. 2006)
- 17.36% Increase



Changes in Cost Estimates

- Altamont (1998)
 - Inflation
 - Bay Crossing = \$0.9 - 1 billion
 - Special Study
 - High Bridge
 - Central Valley Connection
 - West of SR-99 Alignment
 - East Bay Alignment = \$300 million
 - Niles/880 Alignment (Now)
 - Mulford Line Alignment (Then)
 - Altamont Alignment = \$0.8 - 1 billion
 - Considerably More Expensive Infrastructure Required
 - Aerial Structure vs. At-Grade
 - Bay Area Regional Rail Team





Next Steps

- Review
 - Public Website
- Compilation / Comparison in Draft EIR/EIS
 - Travel Times
 - Environmental
 - Engineering Issues



Questions & Answers

